



# **Air Quality Permitting Statement of Basis**

**February 12, 2007**

**Tier I Operating Permit No. T1-060006**

**Idaho Power Co.  
Bennett Mountain Power Project  
Mountain Home**

**Facility ID No. 039-00025**

*Prepared by:*

Steve M. Ogle, P.E.  
Zach Klotovich, P.E.

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## Acronyms, Units, and Chemical Nomenclature

AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
Btu	British thermal unit
CEMS	continuous emissions monitoring system
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Idaho Department of Environmental Quality
EPA	U.S. Environmental Protection Agency
HAPs	hazardous air pollutants
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
lb/hr	pound per hour
MMBtu	million British thermal units
MMBtu/hr	million British thermal units per hour
MW	megawatt
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO <sub>x</sub>	nitrogen oxides
NSPS	New Source Performance Standards
PM	particulate matter
PM <sub>10</sub>	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
PSD	Prevention of Significant Deterioration
PTC	permit to construct
Rules	Rules for the Control of Air Pollution in Idaho, IDAPA 58.01.01
SIP	State Implementation Plan
SO <sub>2</sub>	sulfur dioxide
T/yr	tons per year
TAPs	toxic air pollutants
VOC	volatile organic compound

## **1. PURPOSE**

The purpose of this memorandum is to explain the legal and factual basis for this draft Tier I operating permit in accordance with IDAPA 58.01.01.362.

The Department of Environmental Quality (DEQ) has reviewed the information provided by Idaho Power Co. regarding the operation of the Bennett Mountain facility located outside of Mountain Home, in Elmore County. This information was submitted based on the requirement to submit a Tier I operating permit application in accordance with IDAPA 58.01.01.301.

## **2. FACILITY DESCRIPTION**

This facility consists of a 170-megawatt (170-MW) Siemens Westinghouse Model 501F combustion turbine. Operations at the facility also require ancillary facilities (e.g., a fuel heater). The turbine is a natural gas-fired, simple-cycle unit, and is primarily operated to generate electric power to meet peak system load requirements.

## **3. FACILITY/AREA CLASSIFICATION**

In accordance with IDAPA 58.01.01.006.55, this facility is classified as a major facility (i.e., “A”) for a potential to emit particulate matter (PM), particulate matter with an aerodynamic diameter of ten microns or less (PM<sub>10</sub>), carbon monoxide (CO), nitrogen oxides (NO<sub>x</sub>), and volatile organic compounds (VOCs) at rates greater than 100 tons per year (T/yr). The facility is also classified as major in accordance with IDAPA 58.01.01.008.10(c) for a potential to emit PM<sub>10</sub>, CO, NO<sub>x</sub>, and VOCs at rates greater than 100 T/yr. The facility is not a designated facility as defined by IDAPA 58.01.01.006.27. Refer to Section 7.2 of this document for a discussion of potential emissions rates of the facility.

Although the combustion turbine has a physical potential to emit NO<sub>x</sub> and/or CO at rates greater than 250 T/yr, Permit to Construct (PTC) No. P-050002, issued June 21, 2005, establishes federally enforceable emission rate limits for these two pollutants beneath the 250 T/yr threshold. Subsequently, the facility is not a major facility as defined by IDAPA 58.01.01.205; therefore, Prevention of Significant Deterioration (PSD) permitting requirements do not apply.

The Standard Industrial Classification code for the facility is 4911 (i.e., a simple-cycle gas turbine power generation facility). The facility is located in Elmore County, outside the city of Mountain Home, in Air Quality Control Region 63 and Zone 11. Elmore County is currently unclassified for all criteria pollutants.

## **4. APPLICATION SCOPE**

This project involves development and issuance of the facility’s initial Tier I operating permit.

## **5. SUMMARY OF EVENTS**

February 7, 2006	DEQ received the Tier I operating permit application from Idaho Power Co.
May 18, 2006	DEQ issued a completeness notification for the permit application.
July 13, 2006	DEQ developed a draft Tier I operating permit for the facility review period.
January 22, 2007	DEQ received comments from Idaho Power on the draft permit.

## 6. PERMITTING HISTORY

The following is a chronological history of air quality permits issued to this facility.

- PTC No. 039-00025, issued September 9, 2002
- PTC No. P-030060, issued March 19, 2004
- PTC No. P-050002, issued June 21, 2005

It should be noted that PTC No. P-050002 replaced the terms and conditions of all preceding PTCs, and is the only PTC in effect at the present time.

## 7. PERMIT ANALYSIS

### 7.1 *Basis of Analysis*

The following documents were relied upon in preparing this memorandum and the Tier I operating permit:

- PTC No. P-050002, issued June 21, 2005;
- Tier I operating permit application, received February 7, 2006;
- Compliance certification, received February 7, 2006;
- Rules for the Control of Air Pollution in Idaho (Rules);
- Guidance developed by the U.S. Environmental Protection Agency (EPA) and DEQ.

### 7.2 *Emissions Description and Emissions Inventory*

The facility is basically comprised of two air emissions sources: 1) the combustion turbine and 2) a gas heater. Table 7.1 contains a summary of the potential, criteria pollutant emissions rate estimates submitted by Idaho Power Co (i.e., refer to Table 5.2 of the Tier I operating permit application). The calculation methodologies and assumptions used to derive these emissions estimates were not verified by DEQ as part of this permitting project, and are presented in this document for informational purposes only. Potential criteria pollutant emissions rates are further discussed in the text immediately following Table 7.1.

**Table 7.1 REPORTED POTENTIAL CRITERIA POLLUTANT EMISSION RATE ESTIMATES**

Source	NO <sub>x</sub> (T/yr)	CO (T/yr)	SO <sub>2</sub> (T/yr)	PM <sub>10</sub> (T/yr)	VOC (T/yr)
Turbine	248.16 <sup>a</sup>	248.29 <sup>a</sup>	4.82	43.80	12.26
Gas Heater	0.84 <sup>a</sup>	0.71 <sup>a</sup>	0.11	0.15	0.21
<b>TOTALS:</b>	<b>249.0</b>	<b>249.0</b>	<b>4.9</b>	<b>44.0</b>	<b>12.5</b>

<sup>a</sup>These emissions rates reflect emissions rate limits contained in PTC No. P-050002, issued June 21, 2005. The permit establishes a federally enforceable limit on the potential emission rates of these pollutants.

The emissions inventory contained in the facility's Tier I operating permit application is sufficient to develop a Tier I operating permit for the facility; however, it should be noted that there is some uncertainty regarding potential emissions rates of particulate matter (PM), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM<sub>10</sub>), and volatile organic compounds (VOC) from the combustion turbine. This uncertainty arises because emissions from the turbine vary differentially over a wide range in response to ambient atmospheric conditions (e.g., temperature, relative humidity, etc.) and turbine load/operational conditions (e.g., firing rate, startup conditions, etc.). Consequently, it is difficult to determine the single, absolute "worst case" scenario to estimate each potential emissions rate for each criteria pollutant.

Though not presented in Table 5.2 of the facility's Tier I operating permit, DEQ notes that several operating-scenario assessments reported for the turbine result in potential PM<sub>10</sub> and VOC emission rates that exceed the 100 T/yr threshold (i.e., refer to Appendix E of the Tier I permit application). Additionally, DEQ assessments conducted during development of the PTC for this facility also determined that potential PM, PM<sub>10</sub>, and VOC emissions rates could exceed 100 T/yr (i.e., refer to the Emissions Inventory Review Memorandum contained in Appendix A of the Statement of Basis for PTC No. P-030060 for a complete discussion of this issue), and classified the facility as a major source for these pollutants.

Although the uncertainties associated with the true potential emissions rate estimates for these three pollutants could represent an issue in the event of any future modification(s), these uncertainties do not adversely affect development and issuance of a Tier I operating permit, because no new applicable requirements are triggered at the higher emissions estimates. However, at the present time and based on the information currently available, the true potential emissions rate of PM, PM<sub>10</sub>, and VOCs appears to be greater than 100 T/yr. Consequently, DEQ maintains that this facility is a major source for these pollutants.

The facility's Tier I operating permit application also quantifies potential emissions rates for several hazardous air pollutants (HAPs) and/or toxic air pollutants (TAPs). Based on the reported emissions rates, the potential emissions rate of any single HAP, as well as the total, combined HAP emissions rate, is less than the major threshold criteria for HAP emissions. Prior DEQ-assessments (i.e., conducted for the facility's PTCs) also concurred that the facility is not a major source for HAPs or TAPs.

## **8. REGULATORY ANALYSIS**

This section discusses the applicability of various regulatory provisions to the facility.

### ***8.1 Rules for the Control of Air Pollution in Idaho – IDAPA 58.01.01.301***

In accordance with IDAPA 58.01.01.301, Idaho Power Co. is required to obtain a Tier I operating permit for the Bennett Mountain facility. Furthermore, IDAPA 58.01.01.313.01.b and Permit Condition 2.8.1 of PTC No. P-050002 required the facility to submit a complete application for a Tier I operating permit within 12 months of commencement of operations.

Idaho Power Co. submitted a Tier I operating permit application to DEQ on February 7, 2006. The application materials, as well as information from DEQ's source files, indicate that startup of the turbine occurred on February 15, 2005.

### ***8.2 New Source Performance Standards (NSPS) – 40 CFR 60***

#### **8.2.1 Subpart GG**

The New Source Performance Standard (NSPS) requirements of 40 CFR 60.330, Subpart GG, apply to all stationary gas turbines with a heat input at peak load equal to or greater than 10.7 gigajoules per hour, for which construction commences after October 3, 1977. The combustion turbine proposed for this project meets the applicability criteria given by 40 CFR 60.330; therefore, the turbine is subject to 40 CFR 60, Subpart GG.

#### **8.2.2 Subpart KKKK**

The provisions of 40 CFR 60.4300, Subpart KKKK have not yet been codified within the Code of Federal Regulations; however, it became a final rule on July 6, 2006. This NSPS is only applicable to

the Bennett Mountain facility if the facility modifies or reconstructs the combustion turbine after February 18, 2005. Refer to 40 CFR 60.4305, as proposed on page 38498 of the July 6, 2006, Federal Register.

The facility commenced construction of the combustion turbine prior to February 18, 2005, and the turbine has not been modified or reconstructed since that time; therefore, the provisions of Subpart KKKK do not constitute an applicable requirement for purposes of the Tier I operating permit at this time and are not included or addressed within the permit.

### **8.3 *National Emission Standards for Hazardous Air Pollutants (NESHAPS) – 40 CFR Parts 61 & 63***

#### **8.3.1 Subpart YYYY**

The requirements of 40 CFR 63, Subpart YYYY do not apply to the combustion turbine, because this facility is not a major source of HAP emissions. Only new, existing, or reconstructed stationary combustion turbines located at a major source of HAP emissions are subject to the requirements contained in Subpart YYYY.

### **8.4 *Acid Rain Program – 40 CFR Part 72***

This facility is subject to the Acid Rain Program requirements of Parts 72 through 78. The combustion turbine is an affected unit in accordance with 40 CFR 72.6(a)(3)(i) and is therefore subject to the Acid Rain Program. For more information see Section 14 of this Statement of Basis.

## **9. PERMIT ANALYSIS**

This section describes basis for permit conditions included within the Tier I operating permit.

### **9.1 *Facility-wide Conditions***

The facility wide permit conditions are found in Section 2 of the permit, and generally apply to the entire facility and/or all sources at the facility.

#### **9.1.1 Permit Condition 2.1 – Fugitive Emissions**

Permit Condition 2.1 states that all reasonable precautions shall be taken to prevent PM from becoming airborne in accordance with IDAPA 58.01.01.650-651. This requirement also appears as Permit Condition 2.1 of PTC No. P-050002.

Permit Condition 2.2 requires the permittee to monitor and record the frequency and the method(s) used to reasonably control fugitive dust emissions. This provision may be used to assess the facility's compliance status with Permit Condition 2.1, and also appears as Permit Condition 2.5.1 of PTC No. P-050002.

Permit Condition 2.3 requires that the permittee maintain a record of all fugitive dust complaints received. In addition, the permittee is required to take appropriate corrective action as expeditiously as practicable after a valid complaint is received. The permittee is also required to maintain records that include the date that each complaint was received and a description of the complaint, the permittee's assessment of the validity of the complaint, any corrective action taken, and the date the corrective action was taken. This provision will also be used to monitor and record the facility's compliance status with Permit Condition 2.1, and appears as Permit Condition 2.5.2 of PTC No. P-050002.

To ensure that the methods being used by the permittee to reasonably control fugitive PM emissions, Permit Condition 2.4 requires that the permittee conduct quarterly inspections of the facility. This provision is a new requirement (i.e., this provision does not appear in PTC No. P-050002) that will be used to monitor and record the facility's compliance status with Permit Condition 2.1. The permittee is required to inspect potential sources of fugitive emissions during daylight hours and under normal operating conditions. If the permittee determines that the fugitive emissions are not being reasonably controlled, the permittee shall take corrective action as expeditiously as practicable. The permittee is also required to maintain records of the results of each fugitive emissions inspection.

Both Permit Conditions 2.3 and 2.4 require the permittee to take corrective action as expeditiously as practicable. In general, DEQ believes that taking corrective action within 24 hours of receiving a valid complaint or determining that fugitive particulate emissions are not being reasonably controlled meets the intent of this requirement. However, it is understood that, depending on the circumstances, immediate action or a longer time period may be necessary.

#### 9.1.2 Permit Condition 2.5 – Odors

Permit Condition 2.5 and IDAPA 58.01.01.776 both state: “*No person shall allow, suffer, cause or permit the emission of odorous gases, liquids or solids to the atmosphere in such quantities as to cause air pollution.*” This condition is currently considered federally enforceable until such time it is removed from the State Implementation Plan (SIP), at which time it will be a state-only enforceable requirement. This permit provision also appears as Permit Condition 2.3 in PTC No. P-050002.

Permit Condition 2.6 requires the permittee to maintain records of all odor complaints received, and is intended to assess the facility's compliance status with Permit Condition 2.5. If the complaint has merit, the permittee is required to take appropriate corrective action as expeditiously as practicable. The records are required to contain the date that each complaint was received and a description of the complaint, the permittee's assessment of the validity of the complaint, any corrective action taken, and the date the corrective action was taken.

Permit Condition 2.6 requires the permittee to take corrective action as expeditiously as practicable. In general, DEQ believes that taking corrective action within 24 hours of receiving a valid odor complaint meets the intent of this requirement. However, it is understood that, depending on the circumstances, immediate action or a longer time period may be necessary.

#### 9.1.3 Permit Condition 2.7 – Visible Emissions

Permit Condition 2.7 states: “*No person shall discharge any air pollutant to the atmosphere from any point of emission for a period or periods aggregating more than three minutes in any 60-minute period which is greater than 20% opacity as determined...*” by IDAPA 58.01.01.625. This provision does not apply when the presence of uncombined water, NO<sub>x</sub>, and/or chlorine gas is the only reason for the failure of the emissions to comply with the requirements of this rule. This permit provision also appears as Permit Condition 2.2 in PTC No. P-050002.

To ensure reasonable compliance with Permit Condition 2.7, Permit Condition 2.8 requires that the permittee conduct quarterly visible emissions inspections of the facility. The permittee is required to inspect potential sources of visible emissions during daylight hours and under normal operating conditions. The visible emissions inspection consists of a see/no see evaluation for each potential source of visible emissions. If any visible emissions are present from any point of emissions covered by this section, the permittee must either take appropriate corrective action as expeditiously as practicable, or perform a Method 9 opacity test in accordance with the procedures outlined in IDAPA 58.01.01.625. A minimum of 30 observations shall be recorded when conducting the opacity test. If opacity is determined to be greater than 20% for a period or periods aggregating more than three minutes in any 60-minute period, the permittee must take corrective action and report the exceedance in its annual



compliance certification and in accordance with the excess emissions rules in IDAPA 58.01.01.130-136. The permittee is also required to maintain records of the results of each visible emissions inspection and each opacity test when conducted. These records must include the date of each inspection, a description of the permittee's assessment of the conditions existing at the time visible emissions are present, any corrective action taken in response to the visible emissions, and the date corrective action was taken.

Permit Condition 2.8 requires the permittee to take corrective action as expeditiously as practicable. In general, DEQ believes that taking corrective action within 24 hours of discovering visible emissions meets the intent of this requirement. However, it is understood that, depending on the circumstances, immediate action or a longer time period may be necessary.

#### 9.1.4 Permit Condition 2.9 – Excess Emissions

Permit Condition 2.9 requires that the permittee comply with the requirements of IDAPA 58.01.01.130-136 for startup, shutdown, scheduled maintenance, safety measures, upset, and breakdowns. This permit provision is also required in PTC No. P-050002 as Permit Condition 2.6.

This section of the Tier I operating permit is fairly self-explanatory and no additional detail is necessary in this technical analysis. It should, however, be noted that subsections 133.02, 133.03, 134.04, and 134.05 are not specifically included in the permit as applicable requirements. These provisions of the *Rules* only apply if the permittee anticipates requesting consideration under subsection 131.02 of the *Rules* to allow DEQ to determine if an enforcement action to impose penalties is warranted. Section 131.01 states “...*The owner or operator of a facility or emissions unit generating excess emissions shall comply with Sections 131, 132, 133.01, 134.01, 134.02, 134.03, 135, and 136, as applicable. If the owner or operator anticipates requesting consideration under Subsection 131.02, then the owner or operator shall also comply with the applicable provisions of Subsections 133.02, 133.03, 134.04, and 134.05.*” Failure to prepare or file procedures pursuant to sections 133.02 and 134.04 is not a violation of the *Rules* in and of itself, as stated in subsections 133.03.a and 134.06.b. Therefore, since the permittee has the option to follow the procedures in subsections 133.02, 133.03, 134.04, and 134.05; and is not compelled to, the subsections are not considered applicable requirements for the purpose of this permit and are not included as such.

Idaho Power Co. provided documentation to address certain excess emissions scenarios in Section 6 of their Tier I operating permit application (i.e., pages 30-33 of the application). This information should be referred to in the event of excess emissions at the facility.

#### 9.1.5 Permit Condition 2.10 – Fuel-Burning Equipment

Emissions of PM from fuel burning sources that commence operation on or after October 1, 1979, with a maximum rated input of 10 million British thermal units per hour (MMBtu/hr) or more, are subject to the emissions standards of IDAPA 58.01.01.675 and 676. Additionally, PTC No. P-050002, issued June 21, 2005, requires the combustion turbine and fuel heater to comply with the grain-loading standard for new, gas-fired sources (i.e., Section 676).

Refer to Sections 9.2.4 and 9.3.3 of this document for a discussion of monitoring/reporting provisions for this permit condition, relative to the turbine and the gas heater. There are currently no other identified sources subject to this requirement at the facility.

#### 9.1.6 Permit Condition 2.11 – Open Burning

Permit Condition 2.11 incorporates provisions for open burning (refer to IDAPA 58.01.01.600-616).

#### 9.1.7 Permit Condition 2.12 – Renovation/Demolition

The regulations in 40 CFR 61, Subpart M, are intended to control asbestos releases to the atmosphere. Permit Condition 2.12 requires the permittee to comply with 40 CFR 61, Subpart M.

#### 9.1.8 Permit Condition 2.13 – Regulated Substance/Accidental Release Provisions

The facility is not currently subject to the requirements of 40 CFR 68; however, should the facility become subject to 40 CFR 68 during the lifetime of the Tier I operating permit, it must comply with the following provisions contained within:

- Three years after the date on which a regulated substance present above a threshold quantity is first listed under 40 CFR 68.130, or
- The date on which a regulated substance is first present above a threshold quantity in a process.

Permit Condition 2.13 requires the permittee to comply with 40 CFR 68.10(a).

#### 9.1.9 Permit Condition 2.14 – Air Stagnation Advisories

Permit Condition 2.14 requires the permittee to comply with the provisions of IDAPA 58.01.01.561 during any air pollution emergency episode. This permit condition is also contained in PTC No. P-050002 as Permit Condition 2.4.

#### 9.1.10 Permit Condition 2.15 – Performance Testing

Permit Condition 2.15 outlines the DEQ-approved methods by which the permittee should perform compliance testing. This condition also contains reporting requirements for compliance tests (refer to IDAPA 58.01.01.157).

#### 9.1.11 Permit Condition 2.16 – Monitoring and Recordkeeping

Permit Condition 2.16 lists general requirements for monitoring and recordkeeping requirements of Tier I operating permits (refer to IDAPA 58.01.01.322.07).

#### 9.1.12 Permit Condition 2.17 – Reporting

Permit Condition 2.17 lists general requirements for reports and certifications within the Tier I operating permit program (refer to IDAPA 58.01.01.322.08).

### **9.2 *Emissions Unit No. 1 – One Combustion Turbine***

#### 9.2.1 Emission Unit Description

The combustion turbine is a natural gas-fired Siemens-Westinghouse W501F simple-cycle combustion turbine with generator. This unit has a nominal generating capacity of 170 MW with a rated heat input capacity of approximately 1948 MMBtu, higher heating value. The unit is also equipped with a Dry-Low NO<sub>x</sub> burner and a continuous emissions monitoring system (CEMS) to measure NO<sub>x</sub>, CO, and oxygen. The unit is operated as a peaking plant, to generate electricity during peak-demand hours.

#### 9.2.2 Permit Condition 3.1 – NSPS NO<sub>x</sub> Emissions Limit

As was discussed in Section 8.2.1 of this document, the combustion turbine is subject to the NSPS requirements of 40 CFR 60.330, Subpart GG. The applicable NO<sub>x</sub> emissions limit established in the

NSPS, and also contained as Permit Condition 3.3 in PTC No. P-050002, appears as Permit Condition 3.1 in the Tier I operating permit.

The primary demonstration of compliance with the NSPS NO<sub>x</sub> emissions limit will be the data generated by the NO<sub>x</sub> CEMS, which is required for operations under Permit Condition 3.5 of the Tier I permit. Although the NO<sub>x</sub> CEMS is required under the Acid Rain Program, it will also be utilized as part of the compliance demonstration for the NSPS NO<sub>x</sub> emissions rate limit. Monitoring and reporting requirements relative to this permit requirement are contained in Permit Conditions 3.12 and 3.13, respectively. Compliance with the NSPS NO<sub>x</sub> emissions limit may also be assessed by use of the NSPS fuel monitoring requirement, which is contained in Permit Condition 3.11 of the Tier I permit.

In addition to the general reporting requirements of Permit Conditions 2.9 and 2.17, NSPS excess emissions reporting requirements have been included within the Tier I permit as Permit Conditions 3.17 and 3.18.

It should be noted that Idaho Power Co. conducted the initial NSPS performance test required by 40 CFR 60.335 (i.e., to demonstrate compliance with the NSPS NO<sub>x</sub> emissions limit) on March 23, 2005. Idaho Power Co. provided DEQ written report for the source testing on May 16, 2005, and DEQ determined that the test successfully demonstrated compliance with Subpart GG requirements in a letter dated August 30, 2005. Consequently, this one-time, NSPS requirement has been satisfied and is not included in the Tier I permit as an applicable requirement.

#### 9.2.3 Permit Condition 3.2 – NO<sub>x</sub> and CO Emissions Limits

The turbine is subject to annual NO<sub>x</sub> and CO emissions rate limits which appear as Permit Condition 3.4 in PTC No. P-050002. These emissions rate limits, in conjunction with similar limits for the gas heater, were established to maintain actual, facility-wide emissions rates of these pollutants at rates less than 249.0 T/yr, and assure that the facility is not a major facility as defined by IDAPA 58.01.01.205 (i.e., PSD permitting requirements do not apply).

To ensure that the facility does not exceed emissions rates greater than 249.0 T/yr, the permittee is required to operate NO<sub>x</sub> and CO CEMS and quantify the volumetric flowrate from the turbine stack, to continually monitor the NO<sub>x</sub> and CO emissions actually emitted from the turbine. These requirements appear as Permit Conditions 3.5 through 3.6 in the Tier I permit. Although the NO<sub>x</sub> CEMS is also required under the Acid Rain Program, it is utilized as part of the compliance demonstration for the annual NO<sub>x</sub> emissions rate limit. Permit Conditions 3.5 through 3.6 ensure that emissions rates of NO<sub>x</sub> and CO from the turbine are directly monitored for compliance with the emissions rate limits in Permit Condition 3.4, and also serve to make the emissions rate limits federally enforceable.

Specific monitoring and recordkeeping requirements for the NO<sub>x</sub> and CO CEMS appear in Permit Condition 3.12 of the Tier I permit.

#### 9.2.4 Permit Condition 3.3 – PM Emissions Limit

Permit Condition 3.5 of PTC No. P-050002 requires the combustion turbine to comply with the PM emissions limit established by IDAPA 58.01.01.676 (i.e., the fuel-burning equipment standard). Since the PTC contains this requirement, it is an applicable requirement in accordance with IDAPA 58.01.01.008.03.b and has been included in the Tier I permit as Permit Condition 3.3.

The turbine is only allowed to combust natural gas (refer to Permit Condition 3.4 of the Tier I permit). By using an AP-42 PM emissions factor for natural gas combustion, the volume of flue gas created by the combustion of one million British thermal units of natural gas, the heat content of natural gas, and elevation corrections, it can be shown that combustion of natural gas will not result in an exceedance of the grain-loading standard. Consequently, since this source is not reasonably expected to exceed the

applicable standard, no further demonstration of compliance is required in the permit (i.e., monitoring requirements have not been included in the permit).

#### 9.2.5 Permit Condition 3.4 – Fuel Restrictions

Permit Condition 3.6 of PTC No. P-050002 restricts fuel for the combustion turbine to natural gas with a sulfur content of 0.02 grains per dry standard cubic foot (gr/dscf) of gas, or less. This PTC condition appears as Permit Condition 3.4 in the Tier I permit.

Permit Condition 3.8 of the Tier I permit requires the permittee to monitor and record the amount of natural gas combusted in the turbine in cubic feet per hour. Permit Condition 3.11 requires the permittee to comply with the fuel sulfur and nitrogen monitoring provisions of 40 CFR Part 60.334(h) and 40 CFR Part 75, Appendix D. These monitoring provisions are sufficient to assess compliance with the provisions of Permit Condition 3.6.

#### 9.2.6 Permit Condition 3.5 – NO<sub>x</sub> CEMS Requirement

As previously discussed, the permittee is required to operate a NO<sub>x</sub> CEMS under the Acid Rain Program. This facility is also required to operate a NO<sub>x</sub> CEMS in order to demonstrate compliance with the annual, facility-wide NO<sub>x</sub> emissions limit of 249.0 T/yr. Additionally, Permit Condition 3.7 of PTC No. P-050002 contains a requirement to operate the NO<sub>x</sub> CEMS. This requirement appears as Permit Condition 3.5 in the Tier I operating permit.

Monitoring requirements relative to the Acid Rain Program requirements for the NO<sub>x</sub> CEMS appear in Permit Condition 3.9 of the Tier I permit, and additional monitoring requirements for the NO<sub>x</sub> CEMS appear in Permit Condition 3.12.

Several specific reporting requirements from the Acid Rain Program and/or PTC No. P-050002 are contained as Permit Conditions 3.13 through 3.16 of the Tier I operating permit.

#### 9.2.7 Permit Condition 3.6 – CO CEMS Requirement

As previously discussed, the permittee must operate a CO CEMS to demonstrate compliance with the annual, facility-wide CO emissions limit of 249.0 T/yr. The requirement was contained as Permit Condition 3.8 in PTC No. P-050002, and appears as Permit Condition 3.6 in the Tier I operating permit.

Monitoring requirements for the CO CEMS appear in Permit Conditions 3.10 and 3.12 of the Tier I permit.

The general reporting requirement contained in 7.24 of the Tier I permit also applies to the CO CEMS monitoring data; however, several specific reporting requirements from PTC No. P-050002 also appear in the Tier I permit as Permit Conditions 3.13 through 3.16.

#### 9.2.8 Permit Condition 3.7 – Emissions Rate Quantification Requirements

Permit Condition 3.9 of PTC No. P-050002 requires that the permittee quantify the turbine exhaust flowrate by use of the methodologies prescribed by Method 19 in 40 CFR 60, Appendix A. This permit condition appears as Permit Condition 3.7 in the Tier I operating permit. The associated monitoring requirement is contained within the monitoring provisions of Permit Condition 3.12.

### **9.3 *Emissions Unit No. 2 – One Fuel Heater***

#### 9.3.1 Emission Unit Description

The heater was manufactured by Sivalis Inc., and has a rated, nominal heat input of 3.6 MMBtu/hr. Prior to combustion in the turbine, pipelined natural gas is pre-heated by a fuel heater at this facility. Heating the fuel increases the flow of natural gas to the combustion turbine, increasing combustion efficiency of the unit.

#### 9.3.2 Permit Condition 4.1 – NO<sub>x</sub> and CO Emissions Limits

Permit Condition 4.3 of PTC No. P-050002 establishes annual NO<sub>x</sub> and CO emissions limits for the fuel heater. These emissions limits appear as Permit Condition 4.1 in the Tier I permit.

For compliance assessment purposes, the emissions limits in Permit Condition 4.1 will not be exceeded so long as the permittee complies with the volumetric gas combustion limits established in Permit Condition 4.4 of the Tier I permit. Consequently, the monitoring provisions for Permit Condition 4.4 also serve as the monitoring provision for Permit Condition 4.1.

#### 9.3.3 Permit Condition 4.2 – PM Emissions Limit

Permit Condition 4.4 of PTC No. P-050002 requires the fuel heater to comply with the PM emissions limit established by IDAPA 58.01.01.676 (i.e., the fuel-burning equipment standard). Since the PTC contains this requirement, it is an applicable requirement in accordance with IDAPA 58.01.01.008.03.b and has been included in the Tier I permit as Permit Condition 4.2.

The fuel heater is only allowed to combust natural gas (refer to Permit Condition 4.3). By using an AP-42 PM emissions factor for natural gas combustion, the volume of flue gas created from combustion of one million British thermal units of natural gas, the heat content of natural gas, and elevation corrections, it can be shown that combustion of natural gas will not exceed the grain-loading standard. Consequently, since this source is not reasonably expected to exceed the applicable standard, no further demonstration of compliance is required in the permit (i.e., monitoring requirements have not been included in the permit).

#### 9.3.4 Permit Condition 4.3 – Fuel Restrictions

Permit Condition 4.5 of PTC No. P-050002 restricts fuel for the fuel heater to natural gas with a sulfur content of 0.02 gr/dscf or less. This PTC condition appears as Permit Condition 4.3 in the Tier I permit.

Permit Condition 3.11 of the Tier I permit requires the permittee to comply with the fuel sulfur and nitrogen monitoring provisions of 40 CFR Part 60.334(h) and 40 CFR Part 75, Appendix D, for the combustion turbine. Since the heater is fired by the same natural gas that is supplied to the turbine, these monitoring requirements also serve to monitor the sulfur content of fuel combusted within the fuel heater. These monitoring provisions are sufficient to assess compliance with the provisions of Permit Condition 4.3.

#### 9.3.5 Permit Condition 4.4 – Fuel Combustion Rate Restriction

Permit Condition 4.6 of PTC No. P-050002 restricts volume of natural gas combusted in the fuel heater to 16,878,613 cubic feet in any consecutive 12-month period. This permit condition appears as Permit Condition 4.4 in the Tier I permit. The fuel firing restriction serves to make the annual emissions limits for NO<sub>x</sub> and CO (refer to Permit Condition 4.1 of the Tier I permit) federally enforceable.

Permit Condition 4.5 requires the permittee to monitor and record the amount of natural gas combusted in the fuel heater in standard cubic feet per any consecutive 12-month period. This permit condition is sufficient to assess compliance with the volumetric combustion limit in Permit Condition 4.4.

## **10. INSIGNIFICANT ACTIVITIES**

The facility's Tier I operating permit application asserts that the fuel heater is an insignificant activity based on combustion capacity, in accordance with IDAPA 58.01.01.317.01.b.i.5; however, this assertion is incorrect, as the fuel heater is currently subject to applicable requirements established in PTC No. P-050002, issued June 21, 2005. In accordance with IDAPA 58.01.01.317.01, "...no emission unit or activity subject to an applicable requirement shall qualify as an insignificant emission unit or activity."

The facility has not identified or claimed any other insignificant activities. Consequently, the Tier I operating permit contains no insignificant activities.

## **11. COMPLIANCE SCHEDULE**

### ***11.1 Compliance Plan***

Idaho Power Co. has certified compliance with all applicable requirements and no outstanding compliance issues exist; therefore, no compliance plan is necessary.

### ***11.2 Compliance Certification***

Idaho Power Co. is required to certify compliance each year for the period of January 1 to December 31, in accordance with General Provision 7.21. The facility shall submit an annual compliance certification report for each emissions unit to DEQ and EPA within 30 days of the end of the specified reporting period, in accordance with IDAPA 58.01.01.314.09. The compliance certification report shall address compliance of each emissions unit with the terms and conditions of this permit, including fuel usage, visible emissions, and fugitive emissions.

## **12. ALTERNATIVE OPERATING SCENARIOS**

The facility did not request any alternative operating scenarios.

## **13. TRADING SCENARIOS**

The facility did not request any trading scenarios.

## **14. ACID RAIN PERMIT**

Idaho Power Co. is subject to the acid rain permitting requirements of 40 CFR 72 through 40 CFR 75. The combustion turbine is an affected unit in accordance with 40 CFR 72.6(a)(3)(i) and is therefore subject to the Acid Rain Program. Idaho Power Co. is subject to the provisions of 40 CFR 73 for SO<sub>2</sub> allowances, as it is an affected source pursuant to 72.6(a)(3)(i). The facility does not contain an affected source as detailed in 40 CFR 76.1 (i.e., coal is not used for fuel); therefore, it is not subject to the provisions of Part 76 for NO<sub>x</sub> emissions limits.

The facility is required to obtain SO<sub>2</sub> allowances in accordance with 40 CFR 72.9(c), although the facility does not have a NO<sub>x</sub> or SO<sub>2</sub> emission limits through these regulations. The substance of the regulation which applies to this facility is a requirement to monitor emissions and report the results. The acid rain portion of the permit was drafted in the form of an EPA model permit. The substance of the acid rain permit is that the permittee must comply with the requirements listed on the acid rain permit application that Idaho Power Co. submitted to EPA, signed and dated April 5, 2005. The specific compliance requirements are listed in the Phase II Acid Rain Permit Application, are also contained by

reference within Section 6 of the Tier I permit. Compliance with these requirements will assure compliance with the Acid Rain Program requirements.

## **15. REGISTRATION FEES**

This facility is a major facility as defined by IDAPA 58.01.01.008.10; therefore, registration and registration fees in accordance with IDAPA 58.01.01.387 apply. The facility is currently in compliance with registration and registration fee requirements.

## **16. RECOMMENDATION**

Based on the Tier I operating permit application and review of state rules and federal regulation, staff recommends that DEQ issue draft Tier I Operating Permit No. T1-060006 for public comment. This permit represents the facility's initial Tier I operating permit. The project does not involve PSD permitting requirements.

SO/bf Permit No. T1-060006

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## **Appendix A**

**Idaho Power Co., Bennett Mountain  
Mountain Home, Idaho  
Facility ID No. 039-00025**

Tier I Operating Permit No. T1-060006

### **AIRS Data Entry Form**



**AIRS/AFS FACILITY-WIDE CLASSIFICATION DATA ENTRY FORM**

<b>AIR PROGRAM</b>							<b>AREA CLASSIFICATION</b>
<b>POLLUTANT</b>	<b>SIP</b>	<b>PSD</b>	<b>NSPS (Part 60)</b>	<b>NESHAP (Part 61)</b>	<b>MACT (Part 63)</b>	<b>TITLE V</b>	<b>A – Attainment U – Unclassifiable N – Nonattainment</b>
SO <sub>2</sub>	B		B				U
NO <sub>x</sub>	A	SM	A			A	U
CO	A	SM				A	U
PM <sub>10</sub>	A					A	U
PT (Particulate)	A					A	U
VOC	A					A	U
THAP (Total HAPs)	B						U
			<b>APPLICABLE SUBPART</b>				
			GG				

- <sup>A</sup> = Actual or potential emissions of a pollutant are above the applicable major source threshold. For NESHAP only, class “A” is applied to each pollutant which is below the 10 ton-per-year (T/yr) threshold, but which contributes to a plant total in excess of 25 T/yr of all NESHAP pollutants.
- <sup>SM</sup> = Potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable regulations or limitations.
- <sup>B</sup> = Actual and potential emissions below all applicable major source thresholds.
- <sup>C</sup> = Class is unknown.
- <sup>ND</sup> = Major source thresholds are not defined (e.g., radionuclides).
- <sup>NA</sup> = Not applicable as defined in IDAPA 58.01.01.579, constructed prior to baseline dates.